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## ROSTRONITSCHKIA, A NEW GENUS OF PYRENOAMYCETES

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(WITH PLATE 11)

An interesting Pyrenomycete parasitic on the leaves of *Gesneria albiflora* Kuntze was collected on the Island of Porto Rico in the winter of 1915 by a party of botanists representing the New York Botanical Garden. Material of this collection was studied later by Rehm, who stated in a letter to F. J. Seaver that he regarded the fungus as an undescribed species. He proposed for it the name *Nitschkia nervincola* Rehm, and inclosed in his letter a detailed Latin diagnosis. This diagnosis, dated June, 1915, is attached to the packet of material of this collection in the herbarium of the New York Botanical Garden, but apparently has not been published.

The fungus had been collected previously in 1913 and in 1914 in Porto Rico by F. L. Stevens. Specimens of some of his collections, sent to the New York Botanical Garden, were examined by Seaver and found to be identical with the material studied by Rehm. Subsequently ten different collections were deposited by Stevens in the herbarium of the University of Illinois, and in a paper<sup>1</sup> on Porto Rican fungi he lists them under the name *Nitschkia nervincola*. He does not describe the species, and the writer has found no other mention of the fungus in literature.

In the winter of 1916, H. H. Whetzel and E. W. Olive made extensive collections of fungi in Porto Rico, and obtained abun-

<sup>1</sup> Stevens, F. L. Porto Rican Fungi, Old and New. Illinois Acad. Sci. Trans. 10: 185. 1917.

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dant material of this species in excellent condition for study. Doctor Seaver identified the fungus, and suggested the advisability of studying it critically to determine whether it might not be referred more properly to some other genus. Professor Whetzel generously placed the material at the writer's disposal, and a preliminary examination revealed that the fungus differs in several important respects from other described species of *Nitschkia*. The following summer the examination of all the specimens of this species in the Herbarium of the New York Botanical Garden disclosed the fact that years before Ellis had received a specimen of the fungus collected by Mrs. E. M. Swainson in Jamaica. This specimen contains only material of the imperfect stage, and Ellis labeled it *Botrytis seriata* Ell. & Ev. The date of collection is not given, and the host is not named. The leaves are, however, indistinguishable from those of *Gesneria albiflora* and were probably taken from this host. *Botrytis seriata* was apparently never described by Ellis, and a search of literature has failed to reveal a citation of this name. The fungus is not a species of *Botrytis* in our present conception of the limits of this genus.

The genus *Nitschkia* Otth is included in the Sphaeriaceae-Allantosporae of Saccardo, and is a member of the Cucurbitariaceae in Lindau's arrangement of the Sphaeriales in Engler und Prantl's "Die natürlichen Pflanzenfamilien." As characterized by Lindau the Cucurbitariaceae possess globose perithecia seated on a more or less well-developed stroma. In the genus *Nitschkia* the perithecia are cespitose to scattered, and rupture a covering membrane, or are more rarely superficial. The perithecial wall is black, membranaceous to subcoriaceous, and collapses on drying, becoming cupulate. The ostiolum is inconspicuous. The asci are clavate, 8-spored, and accompanied by thread-like paraphyses. The spores are allantoid, one-celled, and hyaline. The species are typically saprophytic. Ellis in his "North American Pyrenomycetes" includes in the genus *Nitschkia* only those species in which the perithecia are cespitose, and places in the genus *Coelospheria* Saccardo the species with scattered perithecia. Saccardo also has adopted this conception of generic limits.

The parasite under consideration on *Gesneria albiflora* lacks certain characters common to species of *Nitschkia* and *Coelo-*

*sphaeria*, and possesses others not described for any species in either of these genera. The perithecium is firm, coriaceous to carbonaceous, does not collapse, and is provided with a prominent, long, stout, sulcate beak which resembles strikingly that in certain species of *Eutypa*. The ascus contains eight, distinctly yellowish, allantoid spores. The species has the perithecial characters of a *Eutypa* rather than those of a *Nitschkia*. The stroma, however, is not effuse as in *Eutypa*, and the perithecia are seated on the stroma rather than immersed in it. Moreover the fungus possesses a conidial stage unlike any which the writer has found described either in *Eutypa* or *Nitschkia*. Professor F. L. Stevens, although citing his own material of this species tentatively under the name *Nitschkia nervincola*, has stated in a letter to the writer that he sees no reason at all for so classifying the fungus.

Material was recently submitted by the writer to Doctor C. L. Shear with the request that he examine it, and state whether in his opinion this fungus could be regarded properly as a species either of *Eutypa* or *Nitschkia*. He writes that he prefers not to place the species in either of these genera. Assuming that a genus to which it could be referred has not been described recently, he would regard it as the representative of an undescribed genus. Although there are several recently described genera characterized by allantoid spores, in none of these is the perithecium similar to that of the fungus on *Gesneria*. The writer feels justified, therefore, in regarding this species as representative of an undescribed genus. Since the genus falls properly in the Cucurbitariaceae near *Nitschkia*, and on account of the presence of a perithecium with a long, sulcate beak the following name is proposed.

**Rostronitschkia** gen. nov.

Stromata black, formed within the host, later erumpent, bearing first conidiophores, and later perithecia. Conidiophores united to form stout, capitate coremia or stalked sporodochia (Plate II, Figs. 3, 4), bearing hyaline to yellowish, ovate, unicellular conidia. Perithecia developed beneath the conidial layer, pushing upward, at maturity seated in a single row on the stroma; not cespitose as in *Nitschkia*. Perithecial wall black, coriaceous to carbonaceous, prominently wrinkled and roughened, not collapsing, provided with a long, stout, 4-sulcate beak, resembling that in some species

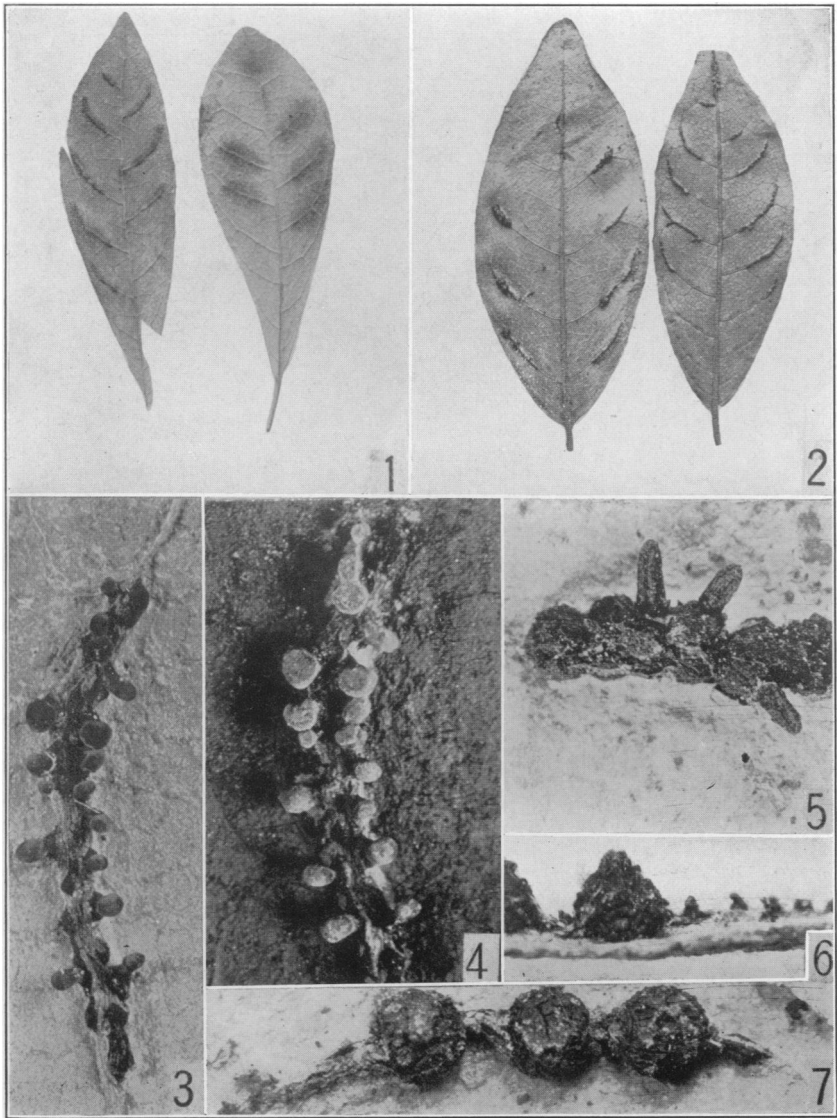
of *Eutypa* (Plate 11, Fig. 5). Ascus clavate, 8-spored, paraphysate. Ascospores allantoid, yellowish, unicellular.

***Rostronitschkia nervincola* sp. nov.**

*Nitschkia nervincola* Rehm, in litt.

Stromata formed in the secondary veins of the leaf, more rarely in the midrib (Plate 11, Fig. 2), erumpent on the lower side as very narrow, linear, black cushions,  $0.3-0.5 \times 2-10$  mm.; the upper surface of the leaf immediately opposite these stromata showing definite diseased spots (Plate 11, Fig. 1) which, though sometimes narrow and confined to the upper surface of the vein, commonly spread over a wider area; these spots in early stages often distinctly rose-colored, later turning brown; the ruptured stromata developing first conidiophores and later perithecia; conidiophores pushing outward in compact masses forming numerous, stout, capitate coremia or stalked sporodochia,  $275-600 \mu$  in diam. at apex  $\times 400 \mu$  in height, scattered irregularly along the stroma or in one or two rather definite rows (Plate 11, Fig. 3); coremium dusty brown, the apical portion frequently whitish and pruinose with conidia (Plate 11, Fig. 4), composed of yellowish-brown, frequently septate, branching conidiophores, which at the outer ends are abundantly and characteristically marked with scars indicating the points of detachment of conidia; the first conidium borne terminally, the conidiophore then sending out immediately below it a short lateral branch which bears a second conidium; the tip of the conidiophore as the result of the continuation of this process assuming a peculiar crooked appearance; conidia hyaline to yellowish, ovate, somewhat pointed at one end, unicellular,  $5-6 \times 1.5 \mu$ ; perithecia developed beneath the conidial fructifications, and pushing outward so that the latter fall away or remain attached to the outer surface of the perithecial wall; perithecium globose, 1 mm. in diam. seated on the stroma, and provided with a long, stout, 4-sulcate beak attaining a length of slightly more than 1 mm., and terminated by the ostiolum; perithecia borne in a single row along the stroma, adjacent perithecia frequently confluent; perithecial wall dull-black, coriaceous, becoming carbonaceous on drying, not collapsing, prominently wrinkled and roughened; ascus clavate, 8-spored,  $18-26 \times 5-6 \mu$ ; ascospores allantoid, unicellular, at first hyaline, later becoming distinctly yellowish,  $6.7-8.4 \times 1.7-2 \mu$ , sub-biseriate to irregularly crowded; paraphyses absent.

Parasitic in the leaves of *Gesneria albiflora* in Porto Rico and Jamaica. Not known to the writer from other localities nor on other hosts.



EUTYPANITSCHKIA NERVINCOLA (REHM) FITZPATRICK

## Specimens examined:

PORTO RICO, *Maricao*; H. H. Whetzel and E. W. Olive. Exploration of Porto Rico. No. 699, *type* (in N. Y. Bot. Gard. Herb.; in Pl. Path. Herb. Cornell Univ. No. 9656; and in Fitzpatrick Herb. No. 1023); N. L. Britton, J. F. Cowell, Stewardson Brown, The New York Botanical Garden, Exploration of Porto Rico No. 4557 (in N. Y. Bot. Gard. Herb.), material of this collection described by Rehm in a letter to Seaver as *Nitschkia nervincola* Rehm; F. L. Stevens, Univ. Illinois Herb. Nos. 207, 735, 3498, 3670, 6718 (in N. Y. Bot. Gard. Herb.); *Mayagüez*, F. L. Stevens, Univ. Illinois Herb. No. 6725 (in N. Y. Bot. Gard. Herb.).

JAMAICA, *Richmond, Trinity Ville*; Mrs. E. M. Swainson (in N. Y. Bot. Gard. Herb. Ellis Collection). Specimen labeled *Botrytis seriata* Ell. & Ev. by Ellis.

## EXPLANATION OF PLATE II

Fig. 1. Upper surface of leaves of *Gesneria albiflora* parasitized by *Rostronitschkia nervincola*. The diseased spots occur immediately opposite the stromata, which are always hypophyllous. Natural size.

Fig. 2. Lower surface of leaves of the same host showing the stromata of the fungus in the secondary veins and midrib. Natural size.

Fig. 3. A stroma of *Rostronitschkia* bearing coremia of the imperfect stage.  $\times 11$ .

Fig. 4. The same stroma photographed under different light conditions to emphasize the whitish pruinosity at the apices of the coremia.  $\times 11$ .

Fig. 5. Mature perithecia of *Rostronitschkia* confluent in a single row on the stroma. Note the prominent, sulcate beaks.  $\times 11$ .

Fig. 6. A younger perithecium in which the beak has not yet developed. Several coremia of the imperfect stage appear at the right.  $\times 11$ .

Fig. 7. Three mature perithecia, the beaks of which have been broken away.  $\times 11$ .

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